

SUMMARY FOR FE-12-06
SELECTED AND POSSIBLE CONTRIBUTING FACTORS

SELECTED FACTORS

Railroad: Florida East Coast Railway Company (FEC)

Location: Rockledge, Florida

Region: 3

Month: August

Date: Aug. 21, 2006

Time: 1:45 p.m., EST

Data for Fatally Injured Employee(s)

Conductor

45 years old

22 years of service

Last rules training: June 25, 2006

Last safety training: June 25, 2006

Last physical: Aug. 9, 1984

Data for All Employees (Craft, Positions, Activity)

Craft: Transportation and Engine

Positions:

Train 915 (local road switcher)

Fatally injured Conductor

Locomotive Engineer

Utility Trainman

Qualifying Engineer

Train Dispatcher

GMC Tractor-trailer Driver (not affiliated with the railroad)

Activity

Switching

EVENT

A Conductor was fatally injured when crushed between the end of a rail car
and a tractor-trailer truck during a switching operation.

SUMMARY FOR FE-12-06 CONTINUED**POSSIBLE CONTRIBUTING FACTORS****PCF No. 1**

The crew members failed to comply with railroad operating rules requiring special safety precautions when rail cars not headed by an engine are moved over a high-way rail crossing at grade. The rules require that when a crossing does not have functioning, automated warning devices, a crew member, properly stationed on the ground, must provide warning signals to motor vehicle operators until the leading end of the movement has the entire crossing blocked. The crew member signals the motor vehicle operators when they may proceed through the crossing.

REPORT: FE-12-2006

RAILROAD: Florida East Coast Railway Company (FEC)

LOCATION: Rockledge, Florida

DATE & TIME: Aug. 21, 2006; 1:45 p.m., EST

EVENT¹: A Conductor was fatally injured when crushed between the end of a rail car and a tractor-trailer truck during a switching operation.

EMPLOYEE: Craft: Transportation and Engine

Occupation: Conductor

Age: 45

Length of Service: 22 years

Last Rules Training: June 25, 2006

Last Safety Training: June 25, 2006

Last Physical: Aug. 9, 1984

CIRCUMSTANCES PRIOR TO THE ACCIDENT

On Aug. 21, 2006, following a statutory off-duty period, a train crew comprising a Locomotive Engineer, Conductor, and a Utility Trainman reported for duty at 4 a.m., EST at the FEC High Point Yard in Cocoa, Florida. The train crew was assigned to perform switching services on Train 915, their regular duty assignment. Train 915 is a local road switcher that switches for industries in and around Cocoa. Another Engineer, who was qualifying in the territory, was also assigned to Train 915. He reported for duty at 5 a.m. at High Point Yard and received a statutory off-duty period prior to reporting for duty. The Conductor had a job briefing with all crew members prior to commencing the day's work.

The train crew's first assignment was to switch cars at local industries that were near High Point Yard. The crew members returned to the yard and made up a train comprising one locomotive and seven rail cars. After performing an initial, terminal air brake test, the train departed the yard at 11:30 a.m., entering onto the main track at mile post (MP) 170.2. They operated the train southward to Old Cocoa Yard at MP 174 and added six high-side, gondola-loaded rock cars to

¹ "Event" is defined as "occurrence that immediately precedes and directly results in the fatality." Possible contributing factors are identified in the following report and attached summary.

the rear of their train. They then performed an intermediate air brake test, proceeded southward to MP 179.3, and switched cars at Southeast Wood Company.

About 12:30 p.m., the crew members proceeded onto the switching lead track, MP 179.4. With only the locomotive, they proceeded onto the WWG lead track and coupled to three empty gondola cars on the east of Nova Road and three empty gondola cars that were at WWG Asphalt Company. After making the coupling, the Conductor and Utility Trainman mounted the rear car. The Utility Trainman dismounted the car at Korbin Road, located 700 feet east of Nova Road. The Conductor stayed on the car until it cleared the switch on the lead track. He dismounted the car, relined the switch, and instructed the Engineer via radio to shove ahead and couple onto the standing cars on the switching lead track. After making the coupling, the Engineer pulled the train southward, clearing the industrial park switch. He relined the switch and mounted the rear car, which was a high-side, gondola car loaded with rock. Standing on the crossover platform, he instructed the Engineer via radio to back up for 12 car lengths. The locomotive was now shoving 17 cars.

The long hood of the locomotive was coupled to the lead car as Train 915 shoved westward. The assigned Engineer was in the Conductor's seat on the north side of the locomotive cab. The qualifying Engineer was at the controls on the south side of the cab operating the locomotive. The Utility Trainman was on the ground at Korbin Road flagging the crossing. Train 915 traversed Korbin Road at a recorded speed of 8 mph.

About the time the Train 915 crew started its shoving move, a 1994 GMC Tractor-trailer Driver departed northward from Trademark Medals Recycling Company onto Nova Road and proceeded toward the road crossing. The open top, 46-foot trailer was loaded with foam rubber scrap.

The accident area, Nova Road, is a 23-foot wide, asphalt paved, public roadway that extends northward from the Trademark Medals Recycling Company. The roadway crosses the industry track about 900 feet north of the recycling company. The road is tangent, and the grade is practically level. At the time of the accident, the roadway was covered with a layer of dirt and dust and was in disrepair with potholes and broken asphalt along the edges of the roadway. The DOT number for the crossing is 272918-B. The industrial track intersects Nova Road at a 90-degree angle and is tangent and practically level from the roadway eastward for 800 feet.

The method of operation on the track involved in the accident is governed by FEC Operating Rule 63, "Other Than Main Track," which states that trains using other than the main track must proceed at restricted speed. Restricted speed is speed that will permit stopping within one half the range of vision, short of a train engine, car, obstruction, stop signal, derail, or switch not properly lined, looking out for broken rail, but not exceeding 20 mph.

At the time of the accident, the sky was clear, and the temperature was 90° F.

THE ACCIDENT

As Train 915 traversed Korbin Road, the Conductor communicated via radio to the Engineer to shove eight cars to the next road crossing, Nova Road. He told the Engineer to shove six, then three cars to the crossing. The last radio communication the Engineer heard was “Blow the air, big hole the train.”

Upon hearing the Conductor’s instructions, the Engineer applied the emergency air brake. After the train stopped, the Engineer radioed the Utility Trainman, instructing him to proceed to the rear of the train to see what was wrong. The Trainman walked toward the rear of the train, inspecting the cars he passed. When he looked ahead, he observed a tractor-trailer lying on its side on the track they were traversing. When he arrived at the lead car, he saw the Conductor lying on the crossover platform of the car. He radioed the Engineer that the Conductor was badly injured and to call for assistance. The Engineer called the Train Dispatcher, informed him of the situation, and requested emergency medical help. The qualifying Engineer dismounted the locomotive and ran to the rear of the train to render assistance. The Trainman checked the Conductor for a pulse, but did not detect one.

The Brevard County Emergency Medical Service (EMS) was notified at 1:48 p.m. and dispatched three emergency responders to the scene. They arrived at 2:01 p.m. The Brevard County Medical Examiner, who also responded to the accident, pronounced the Conductor dead at the scene at 2:03 p.m. The Florida Highway Patrol was notified at 2:08 p.m. and dispatched two officers to the scene. They arrived at 2:24 p.m. The Conductor’s body was transported via EMS to the Brevard County Medical Examiner’s office in Rockledge, Florida.

The Utility Trainman and both Engineers were tested under Federal Railroad Administration (FRA) requirements.

POST-ACCIDENT INVESTIGATION

The investigation revealed that the Conductor rode the west end of FEC Car 15128 from the main track to the point of impact for 1,440 feet. This route took the Conductor over one highway-rail grade crossing that was protected by a crew member (Utility Trainman) and Nova Road Crossing where the collision occurred. The rail car was an open, high-side gondola car loaded with rock. The crossover platform is a 4-foot by 10-foot wide platform with a hand rail that extends the width of the car. The platform is located 46 inches from the ground.

A printout of the locomotive event recorder disclosed that the speed of the train prior to the impact was 8 mph. The Florida Highway Patrol estimated that the tractor-trailer was operating about 20 mph in a northward direction.

The rail car the Conductor was riding struck the center of the truck’s 46-foot long trailer, turning the truck on its side. The truck was moved by the impact about 23 feet and landed on the north side of the track at a 45-degree angle. The Driver of the tractor-trailer was not injured. The

Driver was not charged with any state or local vehicle safety laws. According to the Florida State Traffic Crash Report, the Driver did not see the train as he was approaching the highway-rail grade crossing.

A review of the Conductor's personnel records disclosed he had 22 years experience in the transportation department for FEC and was a seasoned employee. The Conductor's hours of duty records indicated that he had worked as the Conductor on Train 915 for the previous 14 days, excluding his regularly assigned off days.

The DOT number for Nova Road is 272918-B. The Crossbuck Warning Sign was missing from the south approach to the railroad crossing at the time of the accident. There was a crossbuck warning sign in place on the north approach of the railroad crossing. On Sept. 18, 2006, an FRA Inspector revisited the accident site and observed that the railroad had replaced the crossbuck warning sign on the south approach to Nova Road.

Analysis and Conclusion

Based on the employee interviews and schedule information form, the Fatigue Avoidance Scheduling Tool (FAST) software calculated that the Conductor, Engineer 1, Engineer 2, and Trainman were at 84 percent, 84 percent, 83 percent, and 92 percent alert, respectively, at the time of the accident. These alertness levels were determined using the "auto sleep" function, due to the fact that specific sleep schedules were not provided.

These alertness levels show that the Conductor and both Engineers were moderately rested and about 16-17 percent impaired, or fatigued, at the time of the accident. The Trainman was more alert and found only to be 8 percent impaired.

FRA's Post-Accident, Forensic Toxicological Result Report indicated that cocaine metabolite (benzoylecgonine) was present in the urine of the Utility Trainman. The three other crew members' test results were negative.

The Conductor and Trainman on Train 915 failed to comply with FEC Operating Rule 103-A while performing a switching move.

The Brevard County Medical Examiner's report indicated the cause of death as Multiple Blunt Force Injuries.

APPLICABLE RULES

FEC Operating Rule 103-A

When cars not headed by an engine are moved over a highway-rail crossing at grade, a crew member, properly stationed on the ground, must afford warning signals to persons or operators of vehicles approaching the crossing until the leading end of the movement has the entire crossing blocked, and rail movements over the crossing will be made only on proper signal from that crew member.

These actions are not required if:

The crossing is provided with manual or automatic warning devices that are known to be working, or there is another employee stationed at the crossing and in contact with the involved Engineer.

FEC Operating Rule 63

Unless otherwise provided, trains and engines using other than the main track must proceed at restricted speed.